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EXAMINER

WASSUM, LUKE S

ART UNIT

PAPER NUMBER

2177

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Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/493,701

Applicant(s)

WEISSMAN ET AL.

Examiner

Luke S. Wassum

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 06 August 2002.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1 and 16-71 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1 and 16-71 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### Response to Amendment

1. The Applicants' amendment, filed 6 August 2002, has been received, entered into the record, and considered.
2. As a result of the amendment, claims 2-15 were cancelled, claim 1 was amended, and new claims 16-71 were added. Claims 1 and 16-71 are now presented for examination.

### Specification

3. In view of the amendment to the Abstract, the pending objection to the specification is withdrawn by the examiner.

### Claim Rejections - 35 USC § 112

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. Claims 1, 35-38, 56-59, 63 and 66-71 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

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6. Independent claims 1 and 66-70 cite the limitations of either 'organizing documents according to a monetary value assigned to the target location' (claims 1, 66 and 69), or '...according to a *base* monetary value...' (claim 70) or 'ordering identified target elements from the target data set in accordance with the monetary value of the target data elements' (claims 67 and 68).

However, the specification (with regards to Figure 9 and pages 39-41) discloses only that the price (the claimed 'monetary value') of the advertisement (the claimed 'document') is inversely proportional to the semantic distance between the advertisement (the claimed 'target location/ data set') and the query. There is no disclosure of any document/advertisement organization or ordering based on the monetary value, but only based on the semantic distance, the monetary value being inversely proportional to the semantic distance.

7. Further regarding claim 68, this claim cites a method wherein the terms of the target data set elements are expanded. However, the specification fails to disclose such a limitation. The specification, on pages 35-38 and also in Figures 6 and 7, discloses the expansion of *search query* terms, but not the expansion of target data set element terms.

8. Regarding claims 35-38 and 56-59, claims 35 and 56 cite the limitation that said set of concepts associated with said data item is predetermined. However, the specification, specifically at Block 110 in Figure 1, discloses that as part of the pre-processing stage, the lexicon (describing the semantic space) can be updated and expanded to include new meanings or update connections for meanings already present.

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9. Regarding claim 63, this claim cites the limitation that the monetary value of a set of concepts is determined through bidding. However, there is no teaching of such a limitation in the specification.

10. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

11. Claims 24, 32, 45 and 53 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

12. Claims 24, 32, 45 and 53 cite a limitation wherein a labeled entity or data item is one from a group including an image, video, sound file, document, or other similar media. The term "similar" renders the claims indefinite, because it is not clear what the applicants intend to cover by the recitation "similar media". See *Ex parte Kristensen*, 10 USPQ 2d 1701 (Bd. PA&I 1989).

13. Claims 67 and 68 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

14. Claim 67 cites a limitation whereby original query terms are input, expanded query terms are generated, and target data is retrieved. However, in the ordering step, the target data is ordered in accordance with the closeness in meaning between the original search terms and the expanded

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search terms. However, there is no correspondence between the target data to be sorted and the expanded search terms. In order for target data elements to be sorted, the respective distances to be considered should be the distances between the original search terms and the target data element terms.

15. Similarly, regarding claim 68, the closeness between the original target data and the expanded target data is independent of the ordering of the matched target data elements. The closeness should be measured between the search request terms and the original target terms.

#### **Claim Rejections - 35 USC § 102**

16. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) do not apply to the examination of this application as the application being examined was not (1) filed on or after November 29, 2000, or (2) voluntarily published under 35 U.S.C. 122(b). Therefore, this application is examined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

17. Claims 16-34 and 39-55 are rejected under 35 U.S.C. 102(e) as being anticipated by **Hazlehurst et al.** (U.S. Patent 6,289,353).

18. Regarding claim 16, **Hazlehurst et al.** teaches a method as claimed, comprising:
- a) organizing concepts according to their meaning into a lexicon, said lexicon defining elements of a semantic space (see col. 2, line 59 through col. 3, line 9; see also col. 4, line 50 through col. 21; see also col. 11, lines 11-36);
  - b) receiving a first input associated with a first set of concepts from said lexicon, said first input representing a first location in the semantic space (see col. 2, lines 10-25; see also col. 2, line 59 through col. 3; see also col. 7, line 46 through col. 8, line 16; see also col. 22, lines 27-58);
  - c) receiving a second input associated with a second set of concepts from said lexicon, said second input representing a second location in a semantic space (see col. 7, line 46 through col. 8, line 16); and
  - d) determining a semantic distance from the first location to the second location by combination of the semantic distance between each concept in the first set of concepts and each concept in the second set of concepts (see Figures 10A and 10B; see also col. 15, lines 22 through col. 16, line 15).
19. Regarding claim 17, **Hazlehurst et al.** teaches a method for searching a semantic space structured by a lexicon as claimed, comprising:
- a) receiving an input associated with a first set of concepts from said lexicon and representing a first location in the semantic space (see col. 7, line 46 through col. 8, line 16; see also col. 22, lines 27-58);

- b) maintaining a target data set, wherein target data is associated with a second set of concepts from said lexicon that represents a second location in the semantic space (see col. 2, lines 10-25; see also col. 2, line 59 through col. 3; see also col. 7, line 46 through col. 8, line 16);
- c) determining a semantic distance from the first location in the semantic space to the second location in the semantic space for each target data, wherein said semantic distance is determined by combination of the relative closeness in meaning between each concept in the first set of concepts and each concept in the second set of concepts (see Figures 10A and 10B; see also col. 15, lines 22 through col. 16, line 15); and
- d) presenting results of a search conducted on the target data set for the target data close in meaning to the input based on the determined semantic distance (see Figure 16; see also col. 15, line 22 through col. 16, line 15).

20. Regarding claims 18 and 39, **Hazlehurst et al.** additionally teaches a method wherein the input and the target data set are data items and the associated set of concepts represent at least one of the meaning of said data item and important concepts relevant to the data item (see col. 1, line 65 through col. 3, line 40).

21. Regarding claims 19 and 40, **Hazlehurst et al.** additionally teaches a method wherein said data item is text (see col. 7, lines 13-45; see also col. 22, lines 27-58).



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22. Regarding claims 20-24 and 41-45, **Hazlehurst et al.** additionally teaches a method wherein said text is derived from the conversion of a printed text to electronic form, from audio data, from video data, wherein said text is used to label an entity, and wherein the entity is one from the group of an image, video, sound file, document or other similar media (see col. 7, lines 12-46).

23. Regarding claims 25 and 46, **Hazlehurst et al.** additionally teaches a method wherein said labeled entity is a person and where the labeling represents data about the person such as his interests or geographical location (see col. 7, line 66 through col. 8, line 16; see also col. 9, line 50 through col. 10, line 27).

24. Regarding claims 26 and 47, **Hazlehurst et al.** additionally teaches a method wherein said labeled entity is one from the group of an advertisement, a product or service, or a category (see Figure 3; see also col. 6, lines 17-27; see also col. 7, lines 4-10).

25. Regarding claims 27 and 48, **Hazlehurst et al.** additionally teaches a method wherein said text is a user query (see col. 22, lines 27-58).

26. Regarding claims 28-32 and 49-53, **Hazlehurst et al.** additionally teaches a method wherein said text is a domain name or a full URL, a document, web content and electronic communication, and wherein said data item is one from the group of an image, video, sound file, document or other similar media (see col. 7, lines 12-46).

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27. Regarding claims 33 and 54, **Hazlehurst et al.** additionally teaches a method wherein said set of concepts is associated with a person (see col. 7, line 66 through col. 8, line 16; see also col. 9, line 50 through col. 10, line 27).

28. Regarding claims 34 and 55, **Hazlehurst et al.** additionally teaches a method wherein said data item is one from the group of an advertisement, a product or service, or a category (see Figure 3; see also col. 6, lines 17-27; see also col. 7, lines 4-10).

#### **Claim Rejections - 35 USC § 103**

29. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

30. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

31. Claims 1, 66, 69 and 70 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Hazlehurst et al.** (U.S. Patent 6,289,353) in view of **Eldering** (U.S. Patent 6,298,348).

32. Regarding claim 1, **Hazlehurst et al.** teaches a method substantially as claimed, comprising:

- a) determining a first semantic sub-space within a semantic space in response to an input query (see Figures 1-3, 15A and 15B; see also col. 21, lines 13-50);
- b) displaying one or more documents positioned within said first semantic sub-space if any documents are contained therein (see Figure 16; see also col. 15, line 22 through col. 16, line 15; see also col. 21, lines 47-50); and
- c) wherein said documents are displayed according to the closeness in meaning to said input query (see col. 21, lines 13-50).

**Hazlehurst et al.** does not teach a method wherein documents are organized according to a monetary value assigned to the position of the documents in said semantic sub-space relative to said input query.

**Eldering**, however, teaches the concept of determining the price for transmitting or viewing an advertisement based on the correlation of the ad with the consumer profile (see Abstract; see also Figure 9; see also col. 1, lines 18-36; see also col. 3, lines 46-56; see also col. 5, lines 36-45).

It would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate a policy of pricing of advertisements based on the perceived relevance to the viewer, since an advertisement transmitted to a person who would be very interested in the product would

be more valuable to the advertiser than one transmitted to a user who is unlikely to be interested in the product, and so would be worth spending more for transmission to such users (see col. 3, lines 46-56).

33. Regarding claim 66, **Hazlehurst et al.** teaches a method of generating a search result in response to a search request substantially as claimed, comprising:

- a) receiving an input which is associated with a first location in a semantic space (see col. 7, line 46 through col. 8, line 16; see also col. 22, lines 27-58);
- b) maintaining a target data set for which each target data element is associated with a target location in semantic space (see col. 2, lines 10-25; see also col. 2, line 59 through col. 3; see also col. 7, line 46 through col. 8, line 16);
- c) determining a semantic distance from a first location in the semantic distance from the first location in the semantic space to the target location in the semantic space for each target data element (see Figures 10A and 10B; see also col. 15, lines 22 through col. 16, line 15);
- d) identifying target data elements close in meaning to the input, wherein the closeness in meaning is determined by the semantic distance from the first location in the semantic space and the target location in the semantic space (see Figures 10A and 10B; see also col. 15, lines 22 through col. 16, line 15; see also Figure 16; see also col. 15, line 22 through col. 16, line 15); and
- e) organizing the identified target data elements according to the semantic distance between the target location in semantic space and the first location in semantic space (see Figure 16; see also col. 15, line 22 through col. 16, line 15).

**Hazlehurst et al.** does not teach a method wherein the target location corresponds to a monetary value and wherein target data is organized according to a monetary value assigned to the position of the documents in said semantic sub-space relative to said input query.

**Eldering**, however, teaches the concept of determining the price for transmitting or viewing an advertisement based on the correlation of the ad with the consumer profile (see Abstract; see also Figure 9; see also col. 1, lines 18-36; see also col. 3, lines 46-56; see also col. 5, lines 36-45).

It would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate a policy of pricing of advertisements based on the perceived relevance to the viewer, since an advertisement transmitted to a person who would be very interested in the product would be more valuable to the advertiser than one transmitted to a user who is unlikely to be interested in the product, and so would be worth spending more for transmission to such users (see col. 3, lines 46-56).

34. Regarding claim 69, **Hazlehurst et al.** teaches an information handling system for generating a search result in response to a search request substantially as claimed, comprising:

- a) an input apparatus, wherein the input apparatus provides an input associated with a first location in semantic space (see col. 7, line 46 through col. 8, line 16; see also col. 22, lines 27-58);
- b) a network including target locations in a semantic space (see col. 2, lines 10-25; see also col. 2, line 59 through col. 3; see also col. 7, line 46 through col. 8, line 16);

- c) means for determining a semantic distance from the first location in the semantic space to at least one target location (see Figures 10A and 10B; see also col. 15, lines 22 through col. 16, line 15);
- d) means for identifying target locations close in meaning to the input, wherein the closeness in meaning is determined by the semantic distance from the first location in the semantic space to the target location in the semantic space for each target data element (see Figures 10A and 10B; see also col. 15, lines 22 through col. 16, line 15; see also Figure 16; see also col. 15, line 22 through col. 16, line 15); and
- e) means for organizing the identified target data elements according to the semantic distance between the target location and the first location (see Figure 16; see also col. 15, line 22 through col. 16, line 15).

**Hazlehurst et al.** does not teach a system wherein the target location corresponds to a monetary value and wherein target data is organized according to a monetary value assigned to the position of the documents in said semantic sub-space relative to said input query.

**Eldering**, however, teaches the concept of determining the price for transmitting or viewing an advertisement based on the correlation of the ad with the consumer profile (see Abstract; see also Figure 9; see also col. 1, lines 18-36; see also col. 3, lines 46-56; see also col. 5, lines 36-45).

It would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate a policy of pricing of advertisements based on the perceived relevance to the viewer, since an advertisement transmitted to a person who would be very interested in the product would

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be more valuable to the advertiser than one transmitted to a user who is unlikely to be interested in the product, and so would be worth spending more for transmission to such users (see col. 3, lines 46-56).

35. Regarding claim 70, **Hazlehurst et al.** teaches a method of generating a search result substantially as claimed, comprising:

- a) maintaining a target set of text elements (see col. 2, lines 10-25; see also col. 2, line 59 through col. 3; see also col. 7, line 46 through col. 8, line 16);
- b) receiving a text search input (see col. 7, line 46 through col. 8, line 16; see also col. 22, lines 27-58);
- c) relating terms in said search input to terms in said target data set of text elements by semantic association, wherein each term in the input has a predetermined semantic distance to each term in the target data set of text elements (see Figures 10A and 10B; see also col. 15, lines 22 through col. 16, line 15; see also Figure 16; see also col. 15, line 22 through col. 16, line 15); and
- d) organize the text elements in accordance with the closeness in meaning between said text element terms and said search input terms (see Figure 16; see also col. 15, line 22 through col. 16, line 15).

**Hazlehurst et al.** does not teach a method wherein the target location corresponds to a monetary value and wherein target data is organized according to a monetary value assigned to the position of the documents in said semantic sub-space relative to said input query.

**Eldering**, however, teaches the concept of determining the price for transmitting or viewing an advertisement based on the correlation of the ad with the consumer profile (see Abstract; see also Figure 9; see also col. 1, lines 18-36; see also col. 3, lines 46-56; see also col. 5, lines 36-45).

It would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate a policy of pricing of advertisements based on the perceived relevance to the viewer, since an advertisement transmitted to a person who would be very interested in the product would be more valuable to the advertiser than one transmitted to a user who is unlikely to be interested in the product, and so would be worth spending more for transmission to such users (see col. 3, lines 46-56).

36. Regarding claim 71, **Eldering** additionally teaches the concept of determining the price for transmitting or viewing an advertisement based on the correlation of the ad with the consumer profile, wherein the price of retrieving target data is dynamically calculated, with the price increasing with a perceived increased correlation between the advertisement and the interest of the user (see Abstract; see also Figure 9; see also col. 1, lines 18-36; see also col. 3, lines 46-56; see also col. 5, lines 36-45).

37. Claims 60-62, 64 and 65 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Hazlehurst et al.** (U.S. Patent 6,289,353) as applied to claims 16-34 and 39-55 above, and further in view of **Eldering** (U.S. Patent 6,298,348).



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38. Regarding claim 60, **Hazlehurst et al.** teaches a method for searching a semantic space structured by a lexicon substantially as claimed.

**Hazlehurst et al.** does not teach a method wherein said second location is assigned a monetary value.

**Eldering**, however, teaches a method wherein said second location is assigned a monetary value (see Abstract; see also Figure 9; see also col. 1, lines 18-36; see also col. 3, lines 46-56; see also col. 5, lines 36-45).

It would have been obvious to one of ordinary skill in the art at the time of the invention to assign monetary value to said second location, since in this way the advertiser can be charged a price commensurate with the value of the advertisement to the receiver and the advertiser (see Abstract; see also Figure 9; see also col. 1, lines 18-36; see also col. 3, lines 46-56; see also col. 5, lines 36-45).

39. Regarding claims 61, 62 and 64, **Eldering** additionally teaches a method wherein the price of retrieving the target data or being included in the target data is determined by the monetary value of the set of concepts it is associated with (see Abstract; see also Figure 9; see also col. 1, lines 18-36; see also col. 3, lines 46-56; see also col. 5, lines 36-45).

40. Regarding claim 65, **Eldering** additionally teaches a method wherein the price of retrieving the target data is dynamically calculated in response to an input query, the price of returning the target data in the result increasing with the relevance of its associated set of concepts to the query

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(see Abstract; see also Figure 9; see also col. 1, lines 18-36; see also col. 3, lines 46-56; see also col. 5, lines 36-45).

41. Claim 63 is rejected under 35 U.S.C. 103(a) as being unpatentable over **Hazlehurst et al.** (U.S. Patent 6,289,353) in view of **Eldering[1]** (U.S. Patent 6,298,348) as applied to claims 60-62, 64 and 65 above, and further in view of **Eldering[2]** (U.S. Patent 6,324,519).

42. Regarding claim 63, **Hazlehurst et al.** and **Eldering[1]** teach a method for searching a semantic space structured by a lexicon substantially as claimed.

Neither **Hazlehurst et al.** nor **Eldering[1]** teaches a method wherein the monetary value of a set of concepts is determined through bidding.

**Eldering[2]**, however, teaches a method wherein the monetary value of a set of concepts is determined through bidding (see Abstract; see also col. 1, line 36 through col. 2, line 20).

It would have been obvious to one of ordinary skill in the art at the time of the invention to determine the monetary value of a set of concepts through bidding, since this would allow the entity who can present the advertisement to the customer to maximize their income (see col. 1, lines 33-34).

43. Claims 67 and 68 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Hazlehurst et al.** (U.S. Patent 6,289,353) in view of **Voorhees** ("Query Expansion using Lexical-Semantic Relations") in view of **Eldering** (U.S. Patent 6,298,348).

44. Regarding claim 67, **Hazlehurst et al.** teaches a method of generating a search result in response to a search request substantially as claimed, comprising:

- a) organizing concepts according to their meaning into a lexicon, said lexicon defining elements of a semantic space (see col. 2, line 59 through col. 3, line 9; see also col. 4, line 50 through col. 21; see also col. 11, lines 11-36);
- b) receiving a search request and associating said search request with a first set of concepts from said lexicon that represents a first location in the semantic space (see col. 2, lines 10-25; see also col. 2, line 59 through col. 3; see also col. 7, line 46 through col. 8, line 16; see also col. 22, lines 27-58);
- c) searching the target data set for elements generating a match with the set of search terms (see Figures 10A and 10B; see also col. 15, lines 22 through col. 16, line 15; see also Figure 16; see also col. 15, line 22 through col. 16, line 15); and
- d) ordering identified target elements from the target data set in accordance with the closeness in meaning between the search terms and the target data terms (see Figure 16; see also col. 15, line 22 through col. 16, line 15).

**Hazlehurst et al.** does not teach a method wherein the search terms are expanded, wherein the added terms are close in meaning to the original search request based on predetermined semantic relationships defined by the lexicon.

**Voorhees**, however, teaches a method wherein search terms are expanded, and wherein the added terms are close in meaning to the original search request based on predetermined semantic relationships defined by the lexicon (see section 1 Introduction, pages 61-62).

It would have been obvious to one of ordinary skill in the art at the time of the invention to perform query expansion as claimed, since this eases the user's burden when selecting query words, making the retrieval of matching documents less dependent upon the selection of specific query words (section 1 Introduction, pages 61-62).

Neither **Hazlehurst et al.** nor **Voorhees** teaches a method wherein the target location corresponds to a monetary value and wherein target data is organized according to a monetary value assigned to the position of the documents in said semantic sub-space relative to said input query.

**Eldering**, however, teaches the concept of determining the price for transmitting or viewing an advertisement based on the correlation of the ad with the consumer profile (see Abstract; see also Figure 9; see also col. 1, lines 18-36; see also col. 3, lines 46-56; see also col. 5, lines 36-45).

It would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate a policy of pricing of advertisements based on the perceived relevance to the viewer, since an advertisement transmitted to a person who would be very interested in the product would be more valuable to the advertiser than one transmitted to a user who is unlikely to be interested in

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the product, and so would be worth spending more for transmission to such users (see col. 3, lines 46-56).

45. Regarding claim 68, **Hazlehurst et al.** teaches a method of generating a search result in response to a search request substantially as claimed, comprising:

- a) organizing concepts according to their meaning into a lexicon, said lexicon defining elements of a semantic space (see col. 2, line 59 through col. 3, line 9; see also col. 4, line 50 through col. 21; see also col. 11, lines 11-36);
- b) receiving a search request (see col. 2, lines 10-25; see also col. 2, line 59 through col. 3; see also col. 7, line 46 through col. 8, line 16; see also col. 22, lines 27-58);
- c) maintaining a target data set and associating each element of said target data set with a set of concepts from said lexicon that represents a location in the semantic space (see col. 2, lines 10-25; see also col. 2, line 59 through col. 3; see also col. 7, line 46 through col. 8, line 16);
- d) searching the target data set for elements generating a match with the set of search terms (see Figures 10A and 10B; see also col. 15, lines 22 through col. 16, line 15; see also Figure 16; see also col. 15, line 22 through col. 16, line 15); and
- e) ordering identified target elements from the target data set in accordance with the closeness in meaning between the search terms and the target data terms (see Figure 16; see also col. 15, line 22 through col. 16, line 15).

**Hazlehurst et al.** does not teach a method wherein the target data set element terms are expanded, wherein the added terms are close in meaning to the original search request based on predetermined semantic relationships defined by the lexicon.

**Voorhees**, however, teaches a method wherein search terms are expanded, and wherein the added terms are close in meaning to the original search request based on predetermined semantic relationships defined by the lexicon (see section 1 Introduction, pages 61-62).

It would have been obvious to one of ordinary skill in the art at the time of the invention to perform term expansion as claimed, since this eases the user's burden when selecting query words, making the retrieval of matching documents less dependent upon the selection of specific query words (section 1 Introduction, pages 61-62).

Neither **Hazlehurst et al.** nor **Voorhees** teaches a method wherein the target location corresponds to a monetary value and wherein target data is organized according to a monetary value assigned to the position of the documents in said semantic sub-space relative to said input query.

**Eldering**, however, teaches the concept of determining the price for transmitting or viewing an advertisement based on the correlation of the ad with the consumer profile (see Abstract; see also Figure 9; see also col. 1, lines 18-36; see also col. 3, lines 46-56; see also col. 5, lines 36-45).

It would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate a policy of pricing of advertisements based on the perceived relevance to the viewer,

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since an advertisement transmitted to a person who would be very interested in the product would be more valuable to the advertiser than one transmitted to a user who is unlikely to be interested in the product, and so would be worth spending more for transmission to such users (see col. 3, lines 46-56).

46. Claims 35-38 and 56-59 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Hazlehurst et al.** (U.S. Patent 6,289,353) as applied to claims 16-34 and 39-55 above, and further in view of **Tengi** ("Design and Implementation of the WordNet Lexical Database and Searching Software").

47. Regarding claims 35, 37, 56 and 58, **Hazlehurst et al.** teaches a method substantially as claimed.

**Hazlehurst et al.** does not teach a method wherein said set of concepts associated with said data item is predetermined.

**Tengi**, however, teaches a method wherein said set of concepts associated with said data item is predetermined and represents at least one from the group of the meaning of said data item and information relevant to said data item (see section 4.1 Lexical Files, pages 105-106).

It would have been obvious to one of ordinary skill in the art at the time of the invention to use a predetermined set of concepts, since these concepts are the product of detailed relational

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analysis of lexical semantics, and so represent an exhaustive compilation of concepts (see section 4.1 on page 105).

48. Regarding claims 36 and 57, **Hazlehurst et al.** teaches a method substantially as claimed.

**Hazlehurst et al.** does not teach a method wherein said set of concepts associated with said data item is specified by a user.

**Tengi**, however, teaches a method wherein said set of concepts associated with said data item is specified by a user (see discussion of different search types in section 4.5 Retrieving Lexical Information, pages 117-119; see also the different searches available in the WordNet system, table 4.5).

It would have been obvious to one of ordinary skill in the art at the time of the invention to allow the user to specify the set of concepts, since it is not always desirable to retrieve all syntactic categories (see page 119, first full paragraph).

49. Regarding claims 36 and 57, **Hazlehurst et al.** teaches a method substantially as claimed.

**Hazlehurst et al.** does not teach a method further enabling a user to select at least one meaning from the set of possible meanings for said data item in order to provide the correct interpretation for establishing a set of concepts representing the meaning of the data item.



**Tengi**, however, teaches a method further enabling a user to select at least one meaning from the set of possible meanings for said data item in order to provide the correct interpretation for establishing a set of concepts representing the meaning of the data item (see Figures 4.3 and 4.4; see also the disclosure that a specific word sense can be selected by the user, sections 4.6.1 Searching the Database, and 4.6.2 Search Results, on pages 120-123).

It would have been obvious to one of ordinary skill in the art at the time of the invention to allow a user to choose a specific meaning of the word to be retrieved, since this will allow the retrieval of only that information desired by the user (see discussion of the selection of the sense in section 4.6.1 on page 120).

### Response to Arguments

50. Applicant's arguments filed 6 August 2002 have been fully considered but they are not persuasive.

51. Regarding the Applicants' argument that the **Hazlehurst** reference does not allow a user to take advantage of known relationships between concepts, the examiner respectfully submits that both the instant invention and the cited reference teach the retrieval of documents based on a semantic distance between a query and a target document. The semantic distance represents the relationships between concepts embodied by the query terms and the documents.

The examiner cannot find any language in the claims that specifically cite the use of 'known relationships between concepts' in any way that distinguishes the claim limitations from the semantic distance, as is taught by **Hazlehurst**.

52. Regarding the Applicants' argument that the **Hazlehurst** reference does not anticipate the instant invention because it teaches the training of the system with a set of documents, and so it would defy the aspect of the invention that allows for assigning a monetary value to a particular semantic location because the location would not be fixed, the examiner points out that in the specification, specifically at Block 110 in Figure 1, discloses that as part of the pre-processing stage, the lexicon (describing the semantic space) can be updated and expanded to include new meanings or update connections for meanings already present.

Since the specification discloses that the lexicon of the instant invention is subject to updating and expansion, the examiner fails to discern the distinction between the reference and the invention as argued.

53. Regarding the Applicants' argument that the **Eldering** reference fails to teach a "semantic match" indicating the closeness in meaning between two concepts instead of a vector overlap of exact variables, the examiner points out that, as is more explicitly taught by the **Hazlehurst** reference, the vector space is the semantic space, and the overlap of vectors is analogous to the closeness of concepts (see Figures 1-3; see also discussion of vector spaces, col. 4, line 50 through col. 7, line 10).

Furthermore, the examiner points out that the **Eldering** reference is relied upon merely for the teaching of the pricing of advertising being proportional to the perceived interest of the audience to which it is presented (a concept which is illustrated in Figure 9; note the similarity between this drawing and Figure 9 of the instant invention). **Hazlehurst** is relied upon for the determination of a semantic distance between documents (advertisements) and a user's input query.

### Conclusion

54. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

**Weissman et al.** (U.S. Patent 6,453,315) teaches a system for allowing users to locate information that is close in meaning to the concepts for which they are searching.

55. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Luke S. Wassum whose telephone number is 703-305-5706. The examiner can normally be reached on Monday-Friday 8:30-5:30, alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John E. Breene can be reached on 703-305-9790. The fax phone numbers for the organization where this application or proceeding is assigned are 703-746-7239 for regular communications and 703-746-7238 for After Final communications.

In addition, INFORMAL or DRAFT communications may be faxed directly to the examiner at 703-746-5658.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3900.



Luke S. Wassum  
Art Unit 2177

lsw  
October 28, 2002



JEAN B. HOMERE  
PRIMARY EXAMINER